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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,247	07/29/2003	Richard E. Bare	P2003J066	6576

7590

09/21/2004

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EXAMINER
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PRINCE, FRED G

ART UNIT	PAPER NUMBER
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1724

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/629,247

Applicant(s)

BARE ET AL.

Examiner

Fred Prince

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1203.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8, 11-13, 22-27, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsumura et al.

Tsumura et al. teach flowing the wastewater in the absence of any additional carbon source into a treatment basin (2a, 2b), mixing the wastewater (col. 5, lines 52-53), introducing oxygen for a period within the specified time range (col. 5, lines 50-52), stopping oxygen introduction for a period within the specified time range (col. 5, lines 66-68), repeating the steps a plurality of times (abstract), and clarifying the water and returning sludge to the basin (Fig.1), wherein the temperature is within the recited range (Table 1).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al.

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Tsumura et al. is described above. Tsumura et al. do not disclose the recited  $\text{PO}_4$  levels.

In any case, it is well within the purview of the skilled artisan to treat water containing  $\text{PO}_4$  at the recited level using intermittent aeration in order to reduce the amount of phosphate in the water. Accordingly, it would have been readily obvious for the skilled artisan to have treated wastewater at the specified  $\text{PO}_4$  content in order to reduce the amount of phosphate in the water, as known in the art.

5. Claims 10 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al. in view of Hiatt et al.

Tsumura et al. is described above. Tsumura et al. do not explicitly disclose the recited pH range.

Hiatt et al. disclose that nitrification and denitrification cause pH fluctuations and that maintaining wastewater in the specified pH range facilitates proper treatment of the wastewater (col. 7, lines 17-35).

It would have been readily obvious for the skilled artisan to have modified the method of Tsumura et al. by using a pH within the range in order to facilitates proper treatment of the wastewater, as suggested by Hiatt et al.

6. Claims 14-21, 28-29, and 31-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsumura et al.

Tsumura et al. is described above. Tsumura et al. do not explicitly disclose the recited time range.

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It is conventional in the art to use the recited on/off time duration in order to ensure proper conditions for nitrification/denitrification reactions in a reactor in which both reactions take place (see, for example, US Pat No 6,616,843 to Behmann et al.). Accordingly, it would have been obvious for the skilled artisan to have modified the method of Tsumura et al. such that it includes any one of the recited on/off time periods in order to ensure proper conditions for nitrification/denitrification reactions in a reactor in which both reactions take place, as known in the art.

### **Conclusion**

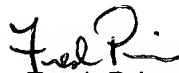
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (571) 272-1165. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Fred Prince  
Primary Examiner  
Art Unit 1724

fgp  
9/14/04